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The Use of Brucella abortus Vaccine in Fistulous Conditions in Horses*

H. SUMNER, M.R.C.V.S., D.V.H.,

LIVERPOOL

In introducing to your notice the use of *Brucella abortus* vaccine in fistulous conditions in the horse, I think perhaps my contribution should take the form somewhat of a personal review indicating the steps one by one of this "empiric's progress."

Some time ago, a case of poll evil presented itself in my practice. The horse, a young cart gelding, was found to have a well-established poll evil, the condition having existed for some months prior to my visit. There was a definite increase in size of the region; the condition was multi-locular and discharging freely from both sides. The entire neck was rigid and a marked disinclination and inability to raise, lower or flex the neck was evident.

I thought this could be considered a suitable case for using the live *Brucella abortus* stock vaccine, with which satisfactory results had been obtained by Duff of the Ministry of Agriculture. A blood sample was taken and sent to the Ministry of Agriculture Laboratory who reported that the agglutination test showed a positive reaction and kindly provided three doses of vaccine and instructions as to use.

The first dose was given as directed, but in view of the extent of the reaction and its effect, not only on the horse but also on the owner and attending veterinary surgeon, I did not give the second dose as directed in seven days, but allowed twelve days to elapse before repeating the injection again with most disconcerting effects on all concerned. The only bright part of a rather grim period was that the enlargement of the poll was already showing a marked shrinkage and a noticeable decline in the amount and offensiveness of the discharge. I was placed in rather a quandary by the owner when he refused to allow me to give any more of the vaccine, in view of the effects upon the horse. Happily my difficulty as to the next step to be taken was solved by the case making a satisfactory recovery which, except for a small abscess, about the size of a pigeon's egg appearing about every six months and clearing without any effort, could be called complete.

My conclusions as a result of this one case were that there was no question as to the efficacy of the vaccine for the purpose for which it was intended, but there could be no illusions as to the alarming and disquieting effect of the reaction, easily the most severe of any I have ever witnessed after the use of any biological product. The symptoms observed were: temperature 105°-107°, sweating, rigidity, rigors, off food and loss of condition. There was an extensive painful swelling over a large area near the site of inoculation.

As a result of these reflections I decided that at the next opportunity I would try the effect of the dead *Brucella abortus* vaccine on a similar condition. Shortly afterwards another case of poll evil came under review. The subject was an aged, hawker's pony, low in condition and as in the previous case the condition was well established with marked enlargement of the area.

At this time I had available a supply of Nator B dead *Brucella abortus* vaccine which had proved quite useless for the purpose intended. This case was treated with the dead vaccine with happy results: complete unimpaired recovery, total absence of any constitutional disturbance and local reaction limited to a small swelling little larger than a five-shilling piece. This case definitely suggested that the dead vaccine had possibilities worthy of investigation. Subsequently, as the live vaccine had been suggested as efficacious in the treatment of fistulous withers, I had the opportunity of trying the dead vaccine on such a case with completely satisfactory results viewed from any aspect. Since then a total of four cases of poll evil and six cases of fistulous withers have been dealt with successfully by the dead vaccine without any other treatment, and breakdown or untoward results of any kind.

At this point a little reflection led to my conviction that the dead vaccine was quite clearly of value in cases where there was some focus undergoing necrosis in varying degrees, and I felt that as the vaccine had proved of such value in poll evil and fistulous withers, I would try its effects on an allied condition, *viz.* quittor.

Unfortunately, in town practice, quittors, like slow paying clients, are always with us. I very soon had the opportunity of trying this vaccine in a further sphere. A well-established case was offered in an old horse with marked coronary fibrosis, multilocular discharging and definite evidence of pain, always suggestive in my view of extensive and progressive necrosis of the cartilage and further suggestive that the necrotic area is in close proximity to the coronopedal joint. The case made an uninterrupted and complete recovery.

Further cases followed in quick succession, always with the same results; complete recovery followed in all cases and in none has there been any breakdown.

At this stage, my stock of Nator B became exhausted and I sought the aid of the Dept. of Veterinary Pathology in the University of Liverpool with a view to obtaining a substitute. This was supplied and has proved just as effective as the original vaccine used. At the same time Dr. Davies suggested that it would be interesting to see whether there was any indication of *Brucella abortus* infection by submitting blood samples from succeeding cases to the agglutination test.

This was done, and of 15 succeeding cases 10 showed reactions in varying degrees. Of the latter 10 cases, agglutinins were found to be present in two cases in a dilution of 1/10 only, three cases in 1/20, four in 1/40 and one in 1/80.

Of this series all have made complete recoveries, with two exceptions: one case dying whilst under treatment, and another whilst showing some improvement (decrease in the amount of discharge and fibrosis of the coronary region) still remains a quittor. This case is undergoing a series of injections of the live vaccine.

Thus, it can be claimed that of a total of 15 quittors in this series 13 have made a complete recovery.

It would appear, from my cases, that the vaccine was effective irrespective of any reaction to the agglutination test.

The period of treatment averaged six weeks, which places this line of treatment firmly on an economic basis, an aspect which can never be far from one's mind when engaged in town practice. No local treatment of any kind was applied, the area merely being kept clean and uncovered.

The effect of the vaccine is quite apparent and of interest. Prior to the resolution of the condition the opening of the sinus shows a noticeable hyperaemic bulging, and about 48 hours later the character of the discharge changes from the usual purulent type to more of a blood-stained serum, which soon ceases, and thus ends another quittor. If careful bandaging is carried out from the first indication of the hyperaemic bulging of the sinus, the necrotic piece very frequently can be recovered on examination of the discharge on the dressing.

The vaccine is given subcutaneously and the dose repeated every five to eight days until recovery takes place, the longer period being preferred if the local reaction approaches the size of a saucer. No constitutional reaction has been observed when the dead vaccine is employed.

In addition, I had two long-standing cases of costal fistula which had resisted all attempts at treatment over a long period. Both cases have cleared up as a result of the vaccine treatment and so far have shown no indication of return.

Another step in this "empiric's progress" has been the use of the vaccine in the treatment of treads—coronet injuries associated with necrotic processes of varying extent and depth. The use of this vaccine is of material help in obtaining the complete segregation of the necrotic tissue, and leaving a clean granulating surface, free from any retained foci of necrotic material.

It was a case of this sort that led up to my next use of this vaccine. The case was a bad tread, an extensive and deep area of necrosis right on the front of the coronet, associated with marked pain—which all too frequently indicates the coming of an open joint. The slough came out and as expected there was left a tissue free of purulent synovia. The use of the vaccine was continued and with nothing other than cleanliness of the part, recovery was complete and the horse returned to work in less than a month. Two further cases of a similar nature had the same result.

In view of the suggestion that the vaccine was of value in open joints arising from coronary treads, the next step was to try it on

*Presented to the Annual General Meeting of the Lancashire Veterinary Association (Division, N.V.M.A.) held at Manchester, February 25th, 1942.

open joints arising from other causes. I have since used the vaccine, associated with cleanliness of the part, in five cases of open pedal joint, with happy results, four being returned to work without any difficulty, whilst one recovery and return to work was considerably retarded by what I presumed to be some arthritic condition of the joint, which is only to be expected.

At the present time, I have just concluded successfully a case of an open elbow joint of traumatic origin with no treatment other than vaccine.

At the same time, although I have employed the vaccine on two cases of open true hock joint, both cases had to be shot.

The suggestion that the vaccine can be of value in joint cases has perhaps some support in an abstract in *The Veterinary Journal*, September, 1941, where culture from two cases of acute gonitis gave pure cultures of *Br. abortus*.

The discussion was opened by Dr. G. O. Davies who first congratulated Mr. Sumner on his most interesting paper and then commented on the laboratory aspect of the subject. The remarkable success which Mr. Sumner had obtained with the vaccine in the many varied conditions which he had treated, was very difficult to explain and at present was more or less speculation. Dr. Davies also discussed the value of the agglutination test as an indication of the presence of infection in the horse and, further, its value as a guide to the usefulness of a vaccine in treatment.

Mr. T. Wilson spoke of his experience with the vaccine which he said had not given him the uniform success claimed for it by Mr. Sumner. He found that his best results occurred when rupture of the lesion took place. Those using this vaccine must be prepared to have a proportion of disappointments.

Professor Craig referred to the incidence of *Brucella abortus* infection in horses as revealed by the agglutination test, and added that probably it was much more widespread than was generally appreciated. It was well known that even in cattle, he agglutination test sometimes failed to reveal infected animals and it was possible that in horses this discrepancy might be even more marked. Just as hygroma in cattle appeared to be associated with Brucella infection, it seemed probable that many forms of bursitis, arthritis, fistulae, etc., in horses were due to the same infection and in quite a proportion of cases *Brucella abortus* was isolated from the lesions. That would explain the response obtained by vaccines. Professor Craig concluded by discussing the possible danger to abortion-free herds of cattle, of horses harbouring *Brucella aborus* infection.

Many other members contributed to the discussion and several asked questions relating to the nature of the vaccine, dosage, method of administration, etc. The speakers included Messrs. A. J. Wright, C. F. Shawcross, Mrs. K. G. R. Kelly, Miss Patchett, Messrs. T. S. Anderson, W. Walker and G. H. Arthur. Dr. Davies and Mr. Sumner replied to the many points raised.

REVIEW

[HOARE'S VETERINARY MATERIA MEDICA & THERAPEUTICS. (Sixth Edition.) Edited and revised by J. Russell Greig and George F. Boddie. Pp. 516. Baillière, Tindall & Cox, London. Price 25s.]

That a veterinary text-book should reach its sixth edition is, in itself, an undoubted indication of the value of the work to the profession. That it should arrive in the middle of a world war seems to point to an urgent need, as well as being, in part, due to the recent important advances in veterinary therapeutics. The value of this edition has been enhanced by the collaboration of Prof. G. F. Boddie, who has been responsible for contributing articles pertaining to the barbiturates and the sulphonamides.

Little departure from previous editions has been made in the general scheme of the work, consisting as it does of three parts. Part I comprises articles on diagnosis, the care of sick animals, actions and uses of drugs, prescription writing, administration of medicines, and veterinary pharmacy. Part II is devoted to materia medica, vaccine and serum therapy and biological tests; Part III to therapeutics. There are, in addition, three appendices dealing with formulae, thermometric equivalents, and the present law relating to poisons.

It is pleasing to note that, following previous practice, many preparations have been retained in the text which, although still regarded as unofficial, are nevertheless of undoubted value to the practitioner and his patients.

In view of the extensive researches which have been carried on, in recent years, upon the vitamins, it is perhaps a little disappointing that only two and a half pages are devoted to this important subject. The distressing and fatal disease—feline enteritis—is dismissed in six lines, and although a practitioner must of necessity adopt some therapeutic procedure when called in, no advice is offered for his guidance. In sundry other small matters, minor criticisms could be levelled, if an exhaustive analysis were indicated; but in view of the general excellence of the work one feels constrained to suppress these and rather emphasise the value such a book of reference must prove to possess in any veterinary library.

In view of the paper and cardboard shortage at present prevailing, the publishers' failure to provide a better cover for the book is readily understood, although regretted. The text is printed in clear, legible type and, on the whole, the publishers should perhaps be warmly complimented upon their ability to produce anything at all in these distressful days.

THE VETERINARY RECORD

June 27th, 1942

THE SECOND CONFERENCE OF VETERINARY STUDENTS

FOR the reason that it embodies a resolution to establish "A provisional committee to promote the formation of the Veterinary Students' Association of Great Britain and Eire, to commence in the session of 1942-43," the report of the above conference may in time come to have historic value. Our National Veterinary Medical Association traces its origin largely to the enterprise of two newly-qualified graduates—Steele and Banham—and the record of the proceedings of the first conference in 1882 is one of the most important historical documents in the archives of the British veterinary profession.

It is to the credit of the veterinary students in our colleges that on their own initiative they have taken the step of fostering a Youth Movement in the veterinary profession. Time was, within the memory of veterinarians who have barely passed middle age, when a report such as that received from the Veterinary Students' Conference would almost assuredly have been belittled by those in high authority in the profession and it would certainly not have been deemed worthy of publication and of having attention prominently drawn to it in the official organ of the N.V.M.A.

It is significant that the British Medical Students' Association has only just been formed and there was a valuable leading article in *Nature* (November 1st, 1941) on the importance of "Youth in Science." It is now realised that youth is endowed with energy, initiative and enthusiasm, but not necessarily irresponsibility; the experience which comes with age does not always lead to wisdom, but sometimes merely to prejudice, a susceptibility to hide-bound tradition and a lack of ability to appreciate new ideas. Nothing but good can come from the reciprocal impact of young enthusiastic and original minds on older, more experienced but less flexible minds. To use Osler's words, "He (the clinician) must walk with the 'boys' else he is lost, irrevocably lost; not all at once, but by easy grades."

With the tendency of our population to contain a higher and higher proportion of the older age groups, it is vitally important for the voice of youth to make itself heard.

We need say no more at this stage about the subjects discussed by the students at their conference than to assure them that to the degree that the reports of their deliberations represent an earnest attempt on the part of the students as an organised body to give expression to their hopes and aspirations for the good of the profession, to that degree will they receive the help that can be given by the strong machinery that is now at the disposal of the National Veterinary Medical Association for impressing upon authority the merits of their just claims.

Weekly Wisdom

"*The incompetence of persons to whom veterinary practice has been abandoned has drawn contempt on the art, which is second only to that of human medicine; the state of human medicine to-day is evidence of what awaits the cultivation of the veterinary art in this country. It requires the sacrifice of as many years to make a skilful veterinarian as to become a skilful physician; each is a task sufficient to engage one man's life. The idea must be abandoned that while medicine is the province of the learned few, any man of ordinary capacity can acquire the veterinary art. The nation requires a veterinary school in which the structure and diseases of animals can be scientifically taught, and when this is duly accomplished men of liberal education will cease to look on veterinary medicine as a mean and degraded profession.*"—Attributed to John Hunter, 1793, in the published account of the creation and activities of the London Veterinary College since 1791. (Smith's *History*. **II**. 205.)

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Private motoring is now forbidden in Eire, which adds to the difficulty of transport. Thus a number of entries and the attendance at the Royal Dublin Spring Show were much lower than usual

CLINICAL COMMUNICATION

Sulphaguanidine in Avian Coccidiosis

C. HORTON SMITH

[A.R.C. Worker attached to the Veterinary Laboratory, Ministry of Agriculture and Fisheries, Weybridge]

Preliminary observations made on the effects of feeding sulphaguanidine to chickens which were susceptible to caecal coccidiosis have shown that during such treatment they were wholly or partially protected against the disease. The results of the experiments so far made confirm those of Levine[1] and of Farr and Allen[2]. To select some examples: in one experiment ten two-weeks-old birds receiving doses of 0·5 grammes of sulphaguanidine each day, in capsule form, for the five days prior to the administration of suspensions of oöcysts, and on each successive day for the duration of the experiment, remained normal and, although *post-mortem* examinations revealed light infections of the caeca in several instances, no oöcysts were recovered from the faeces on the seventh, eight and ninth days respectively after receiving the suspensions. Of the ten untreated control birds eight succumbed to acute caecal coccidiosis and the two survivors passed large numbers of öcysts on the seventh, eighth and ninth days of the infection. In a similar experiment 0·2 gramme of sulphaguanidine in capsule form was administered each day to twenty birds for the duration of the experiment; on the fifth day of treatment the birds received massive doses of oöcysts. Twenty untreated control birds received similar suspensions of oöcysts at the same time. None of the treated birds died, but ten of the controls succumbed to acute caecal coccidiosis. The surviving control birds all exhibited the characteristic syptoms of the disease. In a third instance a group of ten birds was fed 1 per cent. by weight of sulphaguanidine in the ration for five days before receiving suspensions of oöcysts, and similar suspensions were given to ten control birds fed on a normal ration. Some blood appeared in the faeces of the controls on the fourth day, and on the fifth day all the birds succumbed to acute caecal coccidiosis. The birds receiving sulphaguanidine appeared normal. In a fourth experiment, birds were fed on a ration containing 0·5 per cent. by weight of sulphaguanidine for five days before receiving sub-lethal suspensions of oöcysts. A marked reduction in oöcyst-output was observed on the seventh, eighth and ninth days following infection.

Although there is as yet no evidence that sulphaguanidine has curative properties, treatment may prove of use in the control of an outbreak of coccidiosis among chickens. Further work is now being undertaken to find if any ill-effects result from prolonged sulphaguanidine treatment as well as to explore its possible value as a practical control measure on poultry farms.

References

1. Levine, P. P. (1941.) *Cornell Vet.* **31**. 107-112.
2. Farr, M. M., Allen, R. W. (1942.) *J.A.V.M.A.* **100**. 47-51.

SCIENCE AND THE FARM

At a recent meeting of the Executive of the Parliamentary and Scientific Committee further consideration was given to the problem of spreading scientific knowledge among farmers. Lord Bledisloe and Lord Samuel were among those who took part in the discussion.

Suggestions which have been made at this and previous meetings on the subject include the planning of our agriculture on a "nutritional" basis; the continuance of the work of war agricultural committees after the war; the creation of a Directorate of Scientific Research in the Ministry of Agriculture, to apply results as well as to organise research; the passing on of scientific knowledge to selected farmers who would become the leaders or chairmen of local groups and production committees of farmers; and the creation of a national service for spreading scientific knowledge, with regional directors in touch with the Ministry, research institutes, and the chairmen of the farming groups.

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An increase in the practice of over-stocking cows offered for sale at marts was reported by Mr. H. M. Duff, veterinary inspector, at a meeting of Pembrokeshire Livestock Committee. He pointed out that over-stocking was an offence, and the Committee decided to support action against any offender.

ABSTRACT

[THE USE OF "METRATONIN" IN CHRONIC ENDOMETRITIS AND PYOMETRA IN CATTLE. Andres, J. (1941.) *Schweiz. Arch. Tierhlk.* **83**. 401-419. and 446-467.]

Professor Andres, of Zurich veterinary school, reviews the literature on metritis and pyometra in cattle and describes a new form of treatment.

There is much in common, in their nature and clinical characters, between these two conditions but they have certain distinguishing points, the clearest being that metritis usually follows parturition, whilst pyometra usually precedes it (*i.e.*, occurs after copulation, though of course normal parturition does not follow); that is why it is typically associated with a persistent corpus luteum (of pregnancy) and with death of the embryo. Metritis gives evidence of its presence at each oestrum, in the form of vaginal discharge.

With regard to diagnosis, Andres makes the point that it is easier to diagnose cervicitis, as a sign of metritis, by the use of a vaginal speculum with illumination without pulling it back by cervix forceps, as the compression and tension exerted by the latter tend to eliminate the congestion which indicates the existence of inflammation. The additional use of special swab carriers to obtain samples of exudate is not ordinarily called for. In pyometra it is desirable to palpate the ovaries, which, however, may be out of reach: it is for this purpose that traction on the cervix is beneficial, as it usually results in the ovaries being drawn back into reach. Rectal palpation of the uterus is naturally important and in this connection the differential diagnosis between pyometra and pregnancy has to be decided. In pyometra the uterine wall is thinner and lacks cotyledons; the uterine arteries do not beat and the feel of the contents of the uterus is distinct. In metritis the size and feel of the uterus is very variable, but there is not any great diagnostic difficulty because its presence is indicated by the discharge from the vulva.

The main features of interest in regard to treatment are discussed. The two main ways of approach are the methods worked out by Hess and by Albrechtsen. Hess believed that the uterus could be made to empty itself of pus by treatment of the ovary alone—by enucleation of the corpus luteum—whilst Albrechtsen laid stress on the uterus, which he considered it of primary importance to empty by opening the cervix and washing out the uterus. It is now known that both methods are beneficial and they are commonly used in conjunction. Various additional methods have been advocated, such as non-specific stimulation therapy with "yatren," "serobortan," etc., by the application of stimulating medicated tickets to the cervix, by electrical stimulation and so on.

The best principle in the treatment of metritis or pyometra is that the uterus should be made to contract and so empty itself. Research has shown that bacterial infection is secondary in importance and that it is not wise to concentrate on attempts to disinfect the uterine cavity. Indeed, the giving of chemical disinfectants strong enough to act in the abundant exudate results in irritation of the uterus and severe straining on the part of the animal (danger of prolapse).

The Swiss seem to have found a sovereign remedy calculated to fulfil the above principle by their discovery of "Metratonin," which is an extract of the flower tips of the foliage shoots of *Juniperus sabina*, a member of the cypress family of plants. In the form in which it is prepared for use it is suspended in a neutral oil and the dose varies between 100 and 300 c.c., which is run into the uterus through a catheter.

The instruments recommended by Andres include Albrechtsen's cervix forceps, or better, a new type of Swiss design having flat, broad and rather blunt spring-actuated jaws (illustrated), a metal catheter with a movable distance disc which helps to keep it at the right distance of penetration and a large syringe for attachment to the catheter. After use in the usual way (the need for cleanliness and asepsis and for the avoidance of the aspiration of air into the vagina is emphasised) an attempt is made to run off pus through the catheter in the cervix and then some Metratonin is injected and left. It acts in 24 to 72 hours' time by causing the evacuation of the uterus, which becomes firmly contracted. It is not usually advisable to enucleate a corpus luteum: indeed, from the case records, it appears that a new ovarian cycle begins spontaneously.

As an example of some 500 available case records Andres gives histories of four cases of pyometra *post-conceptionem*, two of mummified foetus and three of chronic endometritis, all of which were cured rapidly.

J. E.

[*Note.*—The use of *Juniperus sabina* extract is not a new discovery: it figures in the German veterinary pharmacopoeia as an ecbolic. Perhaps Swiss workers have improved its pharmaceutical preparation and properties in some way so as to increase its action. (*Abstractor*)]

Conference of Veterinary Students

SECOND MEETING, GLASGOW, 1942

The second conference of veterinary students was held in the Glasgow Veterinary College on March 25th and 26th, 1942, under the presidency of Mr. R. L. Steele of that college.

The official representatives were: Messrs. C. D. Cooke and H. N. Bateman (Royal Veterinary College); M. Wynne and A. Carlyle (Liverpool University School of Veterinary Science); J. G. Brotherston and G. R. Bargh (Royal (Dick) Veterinary College); R. L. Steele and A. C. L. Brown (Glasgow Veterinary College), and W. C. P. Scally (Dublin Veterinary College).

The Executive Committee was composed of the President, Mr. R. L. Steele; the Secretary, Mr. A. Morton, and the Treasurer, Mr. A. C. L. Brown.

A tour of the Glasgow Veterinary College was made before the opening of the third session.

The PRESIDENT, in opening the conference, welcomed the representatives very cordially to Glasgow. He extended a specially warm greeting to Mr. Scally as representing, for the first time, the Irish college. He hoped that the results and conclusions reached at this conference would demonstrate to the profession the wide and intelligent interest taken by veterinary students in veterinary problems. He emphasised, however, that whilst exchange of views between the various constituent bodies was eminently desirable it was not the end point of the conference. The real aim was to bring the balance of considered student opinion before the notice of the Royal College and other responsible bodies of the profession so that, in any action contemplated by these bodies, due attention would be paid to the viewpoint of the student.

FIRST SESSION

Agenda: The formation of an Association of Veterinary Students

In introducing this subject, Mr. CARLYLE (Liverpool) began by saying that he felt that a permanent association was essential to consolidate the work done at the conferences. Such an association would provide a permanent vehicle for bringing student opinion before the notice of the profession; it would give greater prestige to veterinary students both in relation to the profession and to other student bodies; it could play a responsible part in future changes in the profession involving student problems. In addition, Mr. Carlyle said that at present the veterinary colleges are isolated. He felt that many advantages would be gained by fuller co-operation with other student bodies—notably that of the British Medical Students Association.

In the discussion which followed the representatives were in complete agreement as to the desirability of forming such an association. Certain difficulties, chiefly of financial and constitutional characters, were thoroughly debated. In the task of drawing up a provisional constitution the conference was greatly aided by a draft constitution put forward as a basis for discussion by Mr. Carlyle.

Finally, it was unanimously decided to form such an association with the following constitution (subject to ratification by the various constituent bodies):—

Constitution of the Veterinary Students' Association of Great Britain and Eire

1. *Name.*—The body shall be known as the Veterinary Students' Association of Great Britain and Eire.

2. *Objects.*—The objects of the association shall be the discussion of all matters affecting veterinary students, and the organisation and co-ordination of activities directed towards the improvement of veterinary education and the welfare of the student body.

The association will not indulge in political activity but this declaration shall not prejudice its right to take any action it deems necessary in promoting these objects.

3. *Membership.*—Membership shall be open to all veterinary students.

4. *Administration.*—(*a*) The governing body of the association shall be the Council of the Veterinary Students' Association of Great Britain and Eire. The former is hereinafter referred to as the Council.

The Council shall consist of two members elected by each constituent body, and a President (who shall have a casting vote only).

In addition, members of the association may attend meetings of Council but shall have only the same rights as guests.

(*b*) The officers of the association shall consist of a President (who shall act as chairman), a Secretary and a Treasurer. They shall be elected by the organising college and shall hold office for one year.

(*c*) The organisation of meetings of the Council and the election of officers shall be in the hands of the organising college according to a rota determined by the Council.

(*d*) In the event of resignation of an officer and/or a member of the Council a successor shall be elected by the body concerned and the change shall be notified to the Secretary.

(*e*) The Council shall meet at least once annually and at other times at the request of at least three of the constituent bodies. At least 28 days' notice of any meeting and its agenda shall be given.

(*f*) Only one of the Council members of each constituent body shall be in his or her final year.

(*g*) The Executive Committee shall carry out the affairs of the association between the meetings of the Council and shall refer all matters to the constituent bodies before taking any action. It shall meet at least once a term and minutes shall be kept.

(*h*) The Council shall have the power to negotiate with, or to affiliate with, other bodies, subject to ratification by the constituent bodies.

(*i*) The Council shall have the power to elect patrons.

(*j*) A report of all meetings of the Council shall be prepared by the Secretary and shall be circularised to such bodies as shall be deemed desirable.

5. *Finance.*—The representative body of each college shall be liable to the association for a sum equivalent to two shillings per student of that college per annum.

6.—Alterations of, or additions to, this constitution shall be made by a two-thirds majority of the Council, present and voting.

The following motion and amendment were then unanimously adopted:—

> "The members of this conference shall act as a provisional committee to promote the formation of the Veterinary Students Association of Great Britain and Eire, to commence in the session 1942-1943,"

and

> "The first meeting of such an association shall be held at the London College in the Christmas vacation."

SECOND SESSION

Agenda: Revision of the Syllabus

Initiating this discussion, Mr. STEELE (Glasgow) said that the question of revising the existing syllabus so as to bring it into line with modern needs was one which had been taxing the resources of the leaders of the profession. It might, therefore, be thought by some that such a problem was beyond the comprehension of students. It had to be remembered, however, that no one was more intimately connected with the syllabus than the student who, during vacation as well as throughout the term, had ample opportunity (by experience and by discussion) to observe how closely college tuition satisfied the demands of practice. There was almost unanimous condemnation of the present syllabus by students. He considered that it would be an advantage to everyone if the conference could put forward, in some detail, the lines on which the students thought that the syllabus could be improved.

Material assistance was provided for the very long and comprehensive discussion which followed by a syllabus (outlined by the Glasgow College students) which had been circulated some time previously to the other constituent bodies. The need for drastic revision of the syllabus in general and of certain subjects in particular was constantly stressed by the members.

The following syllabus was then unanimously adopted as representing the viewpoint of the student. It was decided to recommend this syllabus for the urgent consideration of the Royal College.

A.—It is essential, if the ground is to be covered in five years, to demand Chemistry, Physics and Biology as pre-registration subjects.

B.—*First Year.*

1. General Physiology and General Biochemistry, with more stress laid on the veterinary applications.
2. Junior Anatomy, including complete dissection of the fowl; abdomen and thorax (comparative); general idea of the circulatory, lymphatic and nervous systems and musculature; standardisation of nomenclature.
3. Animal Management, excluding Dentition and Surgical Shoeing.
4. Ethics (a short course to inform the pupil of the responsibilities of student and practitioner in relation to each other and to the public).

Professional examination in all subjects.

Second Year.

1. Applied Physiology, including reproduction and genetics; nutrition and dietetics; principles of pharmacology.

Applied Biochemistry, including special chemistry of the principal organs, fluids and egesta.

2. Senior Anatomy, including dentition, histology and embryology. Due attention should be paid to fresh specimens and to comparative anatomy of horse and bovine.
3. General Bacteriology in the third term.

Professional examination in Applied Physiology and Applied Biochemistry and in Senior Anatomy.

Third Year

1. General and Special Pathology and Special Bacteriology. Much more emphasis should be placed on *post-mortem* work.
2. Hygiene.

Professional examination in Pathology and Bacteriology and in Hygiene.

Fourth Year

1. General principles of Medicine and Surgery including amongst other things, Diagnostics, Anaesthesia and Meat Inspection.
2. Pharmacology, including therapeutics and toxicology.
3. Parasitology (thoroughly reduced and revised, its main application being clinical).
4. Regional Anatomy.

Professional examination in Parasitology and in Pharmacology.

Fifth Year

Clinical Medicine and Surgery.
Obstetrics and Sterility.
Jurisprudence.
Meat Inspection.
Preventive Medicine, including a refresher course in Hygiene and in Dietetics.
Professional examination in the above subjects.

C.—The conference also submitted the following recommendations:—

1. There should be more co-operation between the departments.
2. Much more stress should be laid on the practical aspects.
3. The "Field Station" idea should be extensively developed.
4. There must be a full-time staff in all subjects.
5. More attention should be paid to ruminants and poultry.
6. It should be made compulsory to complete at least four months farm work before taking the second professional examination.

There then ensued a discussion, initiated by the Edinburgh representatives, that a three-year course be given in appropriate universities

for a degree in Veterinary Science (success in examinations for this degree to excuse examinations for the corresponding portions of the M.R.C.V.S. course). After prolonged discussion, the President asked Mr. Brotherston (Edinburgh) to sum up the points in favour of incorporating such a degree in the M.R.C.V.S. course. The main advantages which he stressed were :—

1. Such a course would lead to fuller academic and social co-operation with the universities, *i.e.*, contact with other faculties would provide a broader basis for veterinary students.
2. Increase of veterinary prestige.
3. Better facilities and easing of the financial situation.
4. Better opportunities to develop research workers (from whom has so far come most of the progress in veterinary science).

Mr. Cooke (London) summed up against this proposal. His main points were :—

1. The colleges exist to turn out general practitioners (to whom a B.Sc. is no advantage). There are already facilities for research workers.
2. The prestige of the profession is entirely in the hands of the individual practitioner—who can raise it to a very high standard.
3. There is a grave risk of loss of independence and submergence in the universities; and the London College, for example, could scarcely have better facilities in comparison with universities than it has at present.
4. The public (especially farmers) pay little attention to any alleged difference between a degree and a diploma. We know that our diploma is equally difficult to obtain, and quite as honourable, as any degree.
5. Any change should come from inside the profession (*i.e.*, from the Royal College) rather than from universities which would take the matter out of our control.

A vote was then taken on a proposal that

> "This conference desires that a university degree be conferred in veterinary science on pre-clinical subjects, and that examinations for such a degree should exempt a veterinary student from taking the corresponding M.R.C.V.S. examinations. It is considered that this closer co-operation with the universities would raise the educational and social status of the veterinary profession."

The result of the voting was: For the motion, 5 (Edinburgh, Liverpool and Dublin); against, 4 (Glasgow and London).

Third Session

Agenda: Relationship between Student and Practitioner

Introducing this topic, Mr. Brotherston (Edinburgh) stressed the points brought up at the last conference. He emphasised, in dealing with the problem of finding someone with whom to see practice, the importance of establishing, where possible, personal contact with the surgeon. He considered the advisability of exercising compulsory control over seeing the minimum amount of six months' practice and urged the more thorough examination of case-records. He suggested that the difficulty of finding extra-mural instructors might be overcome by the services of a central committee run by a body such as the N.V.M.A.

He then dealt with the circular issued by Dr. Bullock to all veterinary surgeons in 1941. He presented the point of view of the student and the surgeon. The latter, suggested Mr. Brotherston, considered that he was not bound to take students; students were not an essential aid to him (he managed very well for eight months every year without them); if he had one or two bad students he became, not unnaturally, reluctant to take any more; and that in regard to premiums, the average G.P. considered that he could exercise more control over a non-paying student and for that reason was against the adoption of such a scheme.

The student looked on the matter as follows: In his third year he can be of considerable help in a non-technical capacity, whilst in his later years he can be of some aid professionally. Most students are willing to work as much as is required and are duly grateful to the surgeon. Sometimes, however, the willing student is imposed upon. No student should object to signing an agreement not to practise within a certain area for a specified time after graduation. He must also respect professional etiquette (lectures on Ethics may help considerably). The idea of a premium is to be deplored, but the student should certainly pay for his board. The latter question, suggested the speaker, was one to be decided individually. No more than two students should see practice at any one time with a single surgeon.

The conference then went into discussion. An interesting and promising solution to the problem of finding a practitioner for extra-mural tuition was brought up by Mr. Cooke who outlined a scheme in operation at the London College. It was decided to postpone discussion on this until further information should be available.

Finally, the following motion was unanimously adopted :—

> "Having considered the suggested agreement between student and practitioner, circulated by the R.C.V.S., this conference deplores in the first place the principle of standardisation of any such agreement and, in the second place, deplores this particular agreement in view of the fact that it considers only the welfare of the practitioner and ignores that of the student. This conference deplores the fact that the agreement suggests that the requirement of a premium to be paid by the student should become general among practitioners."

Fourth Session

Agenda: Quackery. Propaganda. Wages. Restriction of number of Students at Colleges.

Mr. Cooke (London), during this session, voiced the opinion of the conference in regard to quackery, propaganda and wages.

In relation to quackery he said that at the previous conference mention had been made of an act to give quacks the status of veterinary practitioners. This was to be part of a long-term policy to eliminate quackery. He had since been told that the Royal College was in agreement with the drawing up of an Act of Parliament in pursuance of this policy. As reported to Mr. Cooke, this Act would be based on the following lines :—

1. A separate register for quacks would be set up.
2. Individuals on this register would be given the title of veterinary practitioner.
3. Such men would have to be of "good personal character."
4. Out of the seven years preceding the Act they must have been engaged for at least five years on veterinary work and must be at least 26 years old.

Examining the above points in detail :—

1. With regard to a separate register—the reasons were obvious—quacks could not be on the same register as properly qualified men.
2. Title of "veterinary practitioner"—this meant that all men brought on to the register would be on an equal footing (apart from the title) as qualified practitioners. Would this be just? Would they have access to and use of drugs previously allowed only to medical men and veterinary surgeons? If so, what would the medical profession have to say? Apparently quacks had managed very well up to date without such aids, so why give them this benefit?
3. They would have to be of good personal character. Who was going to decide this?
4. They must be at least 26 years old. "I must confess," said Mr. Cooke, "that, should this be included in the Act, I should feel very sorry that so much money had been spent on my education. Why go to college at all if one can live comfortably as assistant to some quack, or even by practising quackery oneself?" He suggested that 40 years old would be nearer the mark. The phrase "veterinary work" covered a very wide range and was most unsatisfactory.

If this Act was passed, then into the veterinary profession would come a number of unqualified people—most of them having ready-made practices. They would also have the advantage of previous advertisement and would possess obvious advantages over a new graduate or young veterinary surgeon. Would the Act be supported by a clause forbidding the practising of quackery in the future? If it did not, then it could possess no possible advantage. If it was supported by a law forbidding all quackery then, despite all its disadvantages, it would be sound as a long-term policy. Nevertheless, suppression of future quackery might prove very difficult to carry out effectively. Mr. Cooke suggested that this matter concerned all veterinary surgeons and all students. Students had a definite right to be told what was the opinion of the Royal College in this matter.

The conference, being in absolute agreement with Mr. Cooke's remarks, then unanimously passed a motion that :—

> "The R.C.V.S. Council be approached to give an answer as to :—
>
> 1. Whether the Council support the suggested Act of Parliament whereby unqualified veterinary workers be placed on a register of veterinary practitioners?
> 2. Whether this Act would be supported by a clause forbidding the practising of veterinary science by men not on either the register of veterinary surgeons or on a register of veterinary practitioners?
> 3. Whether the Council is prepared to refer this matter to the veterinary surgeons and veterinary students of Great Britain before reaching a decision?"

Dealing next with the question of propaganda for the profession, Mr. Cooke pointed out that there was still a lamentable amount of ignorance amongst the general public regarding the importance of the veterinary surgeon. "It is clear," he said, "that, especially now that the country is in need of properly qualified men to assist in the maintenance of essential food supplies and in the development of its agricultural and farming policy, an opportunity has arisen such as

may never recur to put the profession on the map." This, he was sure, could be done by a carefully organised scheme of propaganda.

The conference, after further discussion of this important matter, passed the following resolution :—

> "That the R.C.V.S. Council be asked to bear in mind the present opportunities for illustrating to the general public the great importance of the veterinary profession in the maintenance of food and agricultural resources and standards in Great Britain."

Concerning the question of wages, the conference was united in agreeing that something must be done in order to improve the present low standard of assistants' wages. It was thought that this state of affairs might be due to several factors including undercutting in prices by young graduates in order to obtain work, the proportions of supply and demand, but especially to the pernicious habit of some veterinary surgeons in advertising in *The Veterinary Record* asking candidates to "state salary required."• This practice is contrary to the recommendation on page 84 of Dr. Bullock's handbook. Accordingly, the conference passed the following resolution :—

> "That the R.C.V.S. Council be asked to consider the possibility of the fixing of a minimum wage to be paid to veterinary surgeons employed as assistants to other members of the veterinary profession."

Consideration was also given to the question as to whether the number of students entering the veterinary colleges should be restricted. It was unanimously agreed that this was essential. Mr. Scally (Dublin) thought it might be best effected by weeding out unsatisfactory students—particularly those in the early years. This idea received the strong support of the Edinburgh, London and Liverpool representatives. Mr. Steele (Glasgow) pointed out that such weeding out is actually occurring owing to the present conditions but he deplored the suggestion that because a student was unsatisfactory at one college he was necessarily so at another. The majority opinion of the conference, however, was that an unsatisfactory student was unsatisfactory irrespective of situation.

A motion was put forward "That this conference recommends that the R.C.V.S. should consider what means could be taken to restrict the entry of students into the veterinary colleges to a number consistent both with the accommodation available at these colleges and with the probable demand for the services of qualified veterinary surgeons."

An amendment to the above motion ran, "That students rejected from one college on the grounds of unsatisfactory progress in their studies should not be allowed to enter any other veterinary college."

A vote taken on the amendment showed seven in favour of, and two against, its adoption.

A vote on the motion showed the conference to be unanimously in favour of its adoption.

This concluded the business of the conference.

Mr. Cooke proposed a hearty vote of thanks to the President and to the Executive Committee. Messrs. Brotherston, Scally and Carlyle added their appreciation on behalf of their colleges.

Mr. Steele replied on behalf of the Executive Committee.

The members of the conference then had afternoon tea with Dr. Whitehouse (Principal of the Glasgow College) and Mr. Murdoch (Chairman of the Board of Governors). During this occasion the representatives expressed their gratitude to Dr. Whitehouse who had been kind enough to lend the conference the use of the Board Room in which to hold the meeting.

• The insertion of this requirement is now disallowed.—*Editor.*

Sir A. Duncan: A contract with Mr. Christopher, covering cast animals from No. 1 Reserve Veterinary Hospital, Doncaster, was placed by the Ministry of Supply, as agent for the War Office, on April 25th, 1941, as a result of competitive tenders invited from licensed slaughterers. The contract was reviewed and renewed on November 1st, 1941, and February 1st, 1942. The contract price for live animals is in line with the wholesale controlled prices.

Mr. Walkden: Were other horseflesh dealers not given an opportunity of competing or tendering in February, 1942, along with Mr. Christopher?

Sir A. Duncan: No, Sir, I think not.

Mr. Walkden: Is it not reasonable to suggest that everybody in the trade should have an opportunity of tendering for what is a very profitable business to-day?

Sir A. Duncan: I should be glad to look into the matter, but transport and local conditions must be borne in mind in regard to this matter.

Outbreaks of foot-and-mouth disease have been confirmed recently amongst cattle at Market Rasen, Lincolnshire, and pigs at Powick, Worcester.

QUESTIONS IN PARLIAMENT

Veterinary Service

Captain Peter Macdonald asked the Minister of Agriculture whether he is satisfied that, under present conditions, every veterinary surgeon is giving full-time service; and whether, in view of the substantial loss to the country which still results from mortality of dairy stock and other animals from disease, he will arrange for county war agricultural committees to provide, at State expense if necessary, veterinary inspection and treatment, even where this is not sought by individual farmers?

Mr. Hudson: In so far as all veterinary surgeons may not be fully employed, the voluntary scheme for the control of diseases of dairy cattle introduced on June 1st, and the realisation on the part of farmers of the advantage of consulting their veterinary surgeons at an early stage of any trouble, should result in the fuller utilisation of the services of the veterinary profession. The suggestion made in the latter part of the Question is impracticable, if only because the successful control of diseases of animals depends very largely upon willing co-operation between farmer and practitioner.

. . . . .

Retail Deliveries (Rationalisation)

Mr. Wootton-Davies asked the Parliamentary Secretary to the Ministry of War Transport whether he will consider the desirability of permitting horse-drawn transport to operate beyond the one-mile radius in connection with the scheme for pooling retail deliveries in order to encourage the diversion of delivery work to such transport?

The Joint Parliamentary Secretary to the Ministry of War Transport (Mr. Noel-Baker): Schemes for the rationalisation of retail deliveries are settled locally to meet local conditions. They are founded on certain common principles, but there is no general restriction to a radius of one mile. In order to secure the maximum economy both of transport and man-power, the Government have brought all forms of retailers' deliveries into the schemes, whether by motor-van, horse and cart, bicycle, or messenger. To adopt my hon. Friend's suggestion would not only mean a serious loss of economy in man-power, but would also entail an unjust discrimination between different traders.

Mr. Evelyn Walkden: Does my hon. Friend include ice-cream wagons, lorries or barrows which are mechanically propelled vehicles? Does he allow them to travel 14 miles and regard that as being pooled transport?

Mr. Noel-Baker: If my hon. Friend will put down a Question, I will answer it.

. . . . .

Milk (Pasteurisation)

Dr. Summerskill asked the Minister of Health whether he is satisfied with the arrangement under which the National Milk Scheme guarantees a high standard of quality in milk which has passed through a depot, but does not protect people served by a producer-retailer not in possession of a pasteurisation plant, or what further steps he proposed to take?

Mr. E. Brown: I welcome the increase in pasteurisation to which the arrangements in paragraph 6 (*f*) of the White Paper on Milk Policy should contribute. Its further extension must be limited by considerations of what is practicable.

Dr. Summerskill: Is the right hon. Gentleman aware that any producer-retailer can sell milk from a tuberculous cow to an unsuspecting mother, and does he not think the public should be afforded some protection?

Mr. Brown: As I say, we do all we can, subject to the limitations of what is practicable. I have every sympathy with the hon. Lady's object.

Mr. Leach: Would it not be better, while being very strict about cleanliness, not to bother about the foolishness of pasteurisation?

Mr. David Adams: Will steps be taken to increase the amount of milk that is pasteurised?

. . . . .

Unfit Army Horses (Sale)

Mr. Evelyn Walkden asked the Minister of Supply what contract to buy Army horses that are aged or unfit for further service and condemned by the veterinary officer has been granted to Mr. Christopher, of Lincoln; when was it negotiated; were tenders invited by public advertisement; and how the present contract price now compares with the control prices, wholesale, for horseflesh fixed by the Minister of Food?

(*Concluded at foot of preceding column*)

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

June 29th.—R.C.V.S. Oral and Practical Examinations begin.
June 30th.—N.V.M.A. Finance and General Purposes Committee at 36, Gordon Square, W.C.1, 11.30 a.m.
July 2nd.—Meeting of the Central Veterinary Society at the Conway Hall, Red Lion Square, W.C.1, 2.30 p.m.
July 4th.—Meeting of the Society of Women Veterinary Surgeons at the Conway Hall, W.C.1, 2.30 p.m.
July 10th.—Annual Summer Meeting of the Lancashire Division, N.V.M.A., at the Liverpool University Veterinary Field Station, Neston, 2.15 p.m.

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National Milk Improvement Scheme Advisory Committee

Our readers will be glad to learn that a representative of the veterinary profession, in the person of Major Thos. Dalling, has been added to the Advisory Committee which, as announced in our last issue, has been appointed by the Minister of Agriculture to supervise the national scheme for improving the keeping quality of all milk supplies.

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Veterinary Surgeons in the Home Guard

In response to enquiries addressed by the N.V.M.A. on the points with which it deals, the following reply has been received from the Director-General, Home Guard:—

The War Office,
Hotel Victoria,
Northumberland Avenue,
London, W.C.2.
June 19th, 1942.

DGHG. 3977—G1.

Sir,—Reference your letter of May 7th, on the subject of veterinary surgeons serving in the Home Guard.

I am directed to say that it has been agreed with the Ministry of Agriculture and Fisheries that, as the health of the stock of the country is a matter of first importance, it would be contrary to the national interest to deprive stock owners of the services of veterinary surgeons for any reason less than that of imminent danger in a particular area.

It is, therefore, considered desirable that all veterinary surgeons who are members of the Home Guard, irrespective of whether they are also part-time inspectors of the Ministry, should be placed in List (ii) which means that, on the order to muster being given, any member of the Home Guard who has been placed in this category must report to his platoon or other headquarters, for orders, as soon as his civil employment permits. In any case, he must report in person or through some responsible official within 48 hours, when he will be told, according to the operational situation at the time, whether to parade for duty or to continue his civil employment for a further period.

I am to add that the local Home Guard commanders will endeavour to arrange accordingly if application is made to them, but should any difficulties arise which cannot be settled by local arrangement, details should be forwarded to this Department.

I am, Sir,
Your obedient Servant,
G. E. Coke, *Major*,
for Director-General, Home Guard.

F. Knight, Esq.,
36, Gordon Square,
W.C.1.

* * * * *

R.C.V.S. OBITUARY

Barnes, Alfred William, 1030, Fitzroy Avenue, Hastings, New Zealand. Graduated Edinburgh, January 22nd, 1885. Died April 4th, 1942.

Tutt, John Boon, Downstead, Twyford, Winchester. Graduated London, May 16th, 1890; Fellowship May 14th, 1897. Died June 18th, 1942; aged 72 years.

Mr. J. B. Tutt, F.R.C.V.S.

Mr. John Boon Tutt, whose death we record with deep regret, is stated by the *Hampshire Chronicle* to have practised as a veterinary surgeon in the county ever since he qualified. The *Chronicle* proceeds: "During that time he has won a deserved reputation over a very wide area for his skill in the treatment of all animals, and particularly his knowledge and ability in dealing with horses of all types. His contribution to the standard of animal care and treatment in this county has been a very considerable one, and the effect of his work will last for a long time to come."

Mr. Tutt was the only son of Francis Mandrell Tutt, of Wishford, Wilts; he was educated at Wilton School, and, after an apprenticeship as a veterinary surgeon to the late Mr. Blake, M.R.C.V.S., of Bournemouth, he went to the Royal Veterinary College, London. He obtained his M.R.C.V.S. in 1890 and his Fellowship seven years later. He started in practice on his own at Basingstoke in 1890 and went to Winchester in 1894, from which centre he carried out his veterinary work—first on his own and then in partnership with his son, Capt. J. F. D. Tutt, F.R.C.V.S.—right up to his retirement only a few months ago.

As a lover of horses, Mr. Tutt was naturally a keen horseman and a supporter of hunting in the county; his own Hunt was the Hambledon Hunt, but he was always ready to assist the other Hunts in the county in any way he could. As a Mason he passed through the chair of the William of Wykeham Lodge, as well as being a member of Economy Lodge.

Mr. J. B. Tutt was married in 1892 to Margaret Grant, the eldest daughter of the late John Collie, of Rothiemurchus, Inverness (and later of Holybush, Ramsdell); there was one son of the marriage—Capt. J. F. D. Tutt, F.R.C.V.S., who is a member of Council, R.C.V.S. Mrs. Tutt died in 1934, and the following year Mr. Tutt married Letitia Anderson, of "Downstead," Twyford; since then Mr. Tutt has lived at "Downstead." To Mrs. Tutt and his son will go the sympathy of their many friends.

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PERSONAL

Birth.—Steward.—On June 10th, 1942, at the Tonbridge Nursing Home, Tonbridge, to Nancy, wife of J. S. Steward, F.R.C.V.S., D.V.S.M., of Loose, Maidstone, a son.

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Will.—Mr. Gerrard Watkins, M.R.C.V.S., of Mareham-le-Fen, Lincs, retired veterinary surgeon, left £11,108 gross (net personalty £8,436).

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ROYAL COLLEGE OF VETERINARY SURGEONS

D.V.S.M. Examination

At the recent D.V.S.M. examination held at Edinburgh, the following candidates were successful in obtaining the diploma:—

James Donald	R. F. Monie
John Dyke	C. C. Moore
M. J. Fitzpatrick	A. E. Orr
S. A. Irwin	A. B. Paterson
John Lawson	R. N. Phillips
James McCorkindale	A. E. Pierce
George MacLeod	F. J. Proctor

* * * * *

ROYAL ARMY VETERINARY CORPS

The following announcement is made in the issue of *The London Gazette* dated June 12th, 1942:—

Lt. L. Constance (205418) relinquishes his commission on account of ill-health June 15th, 1942, and retains the rank of Lt.

* * * * *

Veterinarians will find of interest the stand and exhibits by the R.S.P.C.A., in connection with the Society's War Animals (Allies) Fund, which form a striking feature of the Exhibition of the Society for Cultural Relations with the U.S.S.R., opened by M. Maisky, the Russian Ambassador, on Monday last at Devonshire House, Piccadilly. The R.S.P.C.A. exhibits include a model veterinary hospital, showing British Army equipment, a "lay-out" of the veterinary wallet, Russian cavalry posters and pictures, etc. The Exhibition will remain open until July 4th, the hours being 10 a.m. to 7.30 p.m. (week-days), 3 to 5 p.m. (Sundays).

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CONFERENCE ON SCIENCE AND THE WAR EFFORT

"It is natural to compare the Conference organised by the Association of Scientific Workers on January 10th and 11th with that convened last October by the Division for the Social and International Relations of Science of the British Association," states *Nature* in its issue of January 17th, and continues: "The difference was striking. Whereas the October Conference was concerned with post-war planning, this conference discussed in a practical way the immediate scientific and technical problems of the war itself. Even more noticeable was the difference in the type of person who, in general, attended and spoke. Here were gathered together in the main rank-and-file men of science fresh from their work in laboratories, factories and research institutions all over the country. They came not only with grievances and criticism (of which there were plenty), but with proposals for better co-ordination of research and better utilisation of our technical personnel. However, the Conference was not dominated by youth. An encouraging feature was the support it received from distinguished men of science, although the amount of this support would

not appear to have been commensurate with the importance of the topics discussed. These topics ranged from the training of technical personnel and the university education of scientific workers to the organisation of maximum productive effort. In addition, there were important contributions on the subjects of food and agriculture, and building, housing and A.R.P.

"Sir Daniel Hall, Vice-President of the Association, who opened the Conference, emphasised that men of science must have regard to the actual machinery by which Government is carried on, otherwise their proposals would receive scant consideration. He stated for the consideration of the Conference that the real problem was for scientific workers and the Government itself to find the machinery which would ensure a proper method of using the expert. Captain L. F. Plugge, Chairman of the Parliamentary and Scientific Committee, welcomed the Conference on behalf of his committee, and expressed the hope that his committee would be informed of the matters discussed, so that they could be followed up. New methods in building worked out as a result of the war-time shortage of materials were described by Dr. R. Fitzmaurice, of the Building Research Station. Professor J. B. S. Haldane pointed out that had many of the recommendations of the A.R.P. Co-ordinating Committee been adopted, not only would there have been an immense saving of life but also a saving of materials and money.

"Sir John Orr treated nutrition from the point of view of its effect upon the efficiency of the worker, soldier and civilian. He pointed out that considerable increases in food production are necessary to provide a decent standard of health. Dr. H. M. Sinclair, of the Department of Biochemistry, Oxford, emphasised that the primary cause of malnutrition is poverty, with the secondary factors of ignorance and the decreased availability of familiar foodstuffs. Sir Daniel Hall outlined a post-war policy for agriculture. He characterised the policy of high prices as a policy of scarcity, and called for national ownership of our limited land area. Sir John Russell, Professor H. D. Kay, Professor F. G. Gregory, and Dr. A. Walton contributed to an extensive discussion. Professor J. A. Carroll called for a co-ordination between school and university, and for an inquiry by such a body as the Association of Scientific Workers into the scope and content of courses. Mr. J. A. Lauwerys discussed elementary technical education, and suggested that a closer contact between schools and the industrial world would be valuable. Both sessions on education were marked by the practical detail of the discussions.

"The two sessions on January 11th were devoted to the place of the industrial and Governmental scientific worker in the war effort. Professor W. Wardlaw, and Mr. F. M. H. Markham, of the Central Register, spoke and answered criticisms of the working of the Register. Mr. E. D. Swann, of the executive committee of the Association of Scientific Workers, outlined the Association's case for a select committee to investigate the whole question of the utilisation of scientific personnel and for the production executive to appoint a technical personnel committee. Professor H. Levy asked for a place for scientific men in the commands of the fighting forces, while Mr. F. Morgan, an operational research scientist attached to an R.A.F. Command, outlined the vital work which he and his colleagues are doing, and made suggestions for its improvement. Mr. Halse, of the Industrial Committee of the Association, gave numerous examples of inefficiency in the actual working of industry. Mrs. P. Clarke spoke of the low rates of pay of explosives chemists, which compare unfavourably with those received by unskilled personnel. Drs. Garland, Stanford and McClean made out an impressive case for better medical services in industry and the consequent effect on production.

"Scientific workers from a variety of undertakings took part in the discussions. The unanimous opinion seemed to be that production is being handicapped by lack of scientific training, mismanagement and inefficiency in high places, and through the spirit of peace-time competition between firms. Lack of contact between the Services and scientific workers was emphasised. Mr. J. A. Henley summed up this part of the conference, while Professor J. D. Bernal dealt with the proceedings as a whole. He stated that if the whole truth could be told, the situation would seem to be even worse than that described by the speakers from their first-hand experience. He said that attempts by men of science to better the situation would meet with opposition from industry and from the Government. In his view, the opposition to scientific workers in the last few months is equivalent to sabotage and perhaps something rather stronger. He underlined the need for speed in view of the urgency of the situation.

Thus ended one of the most significant gatherings of British scientific workers held during the war. It ended on a note of action, as representations by the Association are to be made to the Ministries of Labour and of Supply as a direct result of it. It is to be hoped that the facts which came to light will be most seriously considered by these Ministries."

PHOSPHATE INTAKE AND THE PARATHYROIDS

In an annotation on the above subject *The Lancet* observes that it has long been known that if the parathyroid glands are removed typical tetany results, and that this is associated with a low serum-calcium and a high serum-phosphorus, and proceeds: "With this change it is possible that the acid-base balance is altered, as of course it is in the tetany of alkalosis. Hitherto it has been generally assumed that the low blood-calcium rather than the high blood-phosphorus is responsible for the actual symptoms of tetany, but there are some points which suggest that it may in fact be the blood-phosphorus factor which is really at work. Whether this is the case or not, it seems possible that the parathyroids act primarily on the phosphorus rather than on the calcium metabolism, and that changes in calcification, for instance, may sometimes be merely the secondary result of variations in phosphate equilibrium. Following up this possibility, A. J. Helfet* has studied the bone changes in certain parathyroid diseases. He first formulated an ingenious theory of parathyroid function and has then checked his ideas by clinical observations. He suggests that parathyroid secretion—parathormone—controls the level of inorganic phosphate in the blood, and that its function is to prevent this level rising rather in the way that insulin prevents the blood-sugar rising. Conversely he assumes that a rise of phosphate in the blood, if it does occur, may act as a stimulus to parathormone secretion, again comparable to the effect of an increased sugar intake in increasing insulin output and glucose tolerance. Finally he suggests that parathormone prevents the blood-phosphate rising both by stimulating the excretion of phosphate by the kidney and by mobilising fresh calcium ions from the bones so as to form inactive calcium phosphate which can be readily excreted.

"Helfet has applied these views to various cases of definite hyperparathyroidism. Of these the classical generalised fibrocystic disease is the best example, in which there is a true adenoma of the parathyroid, the blood-calcium is high and the blood-phosphorus reduced. On surgical removal of the adenoma the condition reverts to normal and no other treatment is as a rule required. Less dramatic cases are those of fibrocystic disease of unknown origin, in which no parathyroid tumour is found and blood-phosphorus and blood-calcium levels are normal. The clinical picture, however, resembles almost exactly that of generalised fibrocystic disease, showing similar osteoporosis and cyst-formation in bones. These cases, though rare, have been described by Hunter and others and Helfet has been able to examine and treat four of them. His treatment is based on his view that in these cases phosphates are retained in the body, with resultant stimulation of the parathyroids and excessive parathormone activity. In order to reduce phosphate absorption Helfet gives the patient aluminium acetate, which combines with phosphate in the intestine and precipitates insoluble aluminium phosphate. He has observed no ill effects from giving aluminium acetate continuously for over a year. The amount given daily (m 75 of the B.P. liquor) has a phosphate-combining power equivalent to about gr. 3 of calcium. No calcium is given other than that contained in a normal diet, which includes not less than one pint of milk a day; no other treatment or preparations are ordered. All Helfet's four patients improved during the course of treatment, which had naturally to be maintained over many months; the radiological appearances of the bones at the end of six months' treatment are very striking. While recognising the empirical nature of his treatment in other conditions Helfet has cautiously suggested that it may have other applications, and he reports some results in twelve cases of rheumatoid arthritis. There he is on less certain ground, but further work on phosphate intake and the parathyroids may well throw light on several metabolic disorders at present little understood. He has opened up a promising approach to this obscure subject."

* *Brit. J. Surg.* (1940.) 27. 651.

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ARTIFICIAL INDUCTION OF LACTATION IN VIRGIN ANIMALS

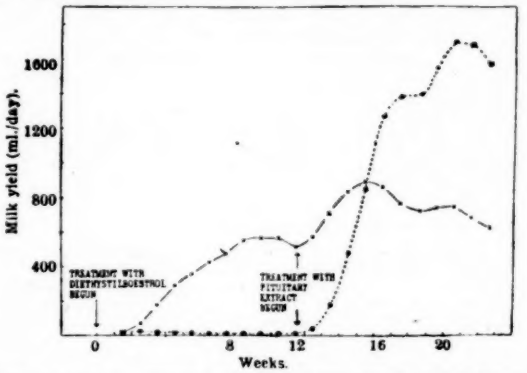
The following contribution on the above subject is made by S. J. Folley and F. G. Young, of the National Institute for Research in Dairying (Reading) and the National Institute for Medical Research (Hampstead) respectively, to the issue of *Nature* of November 8th, 1941 (**148**. 563).

The discovery by Folley and his co-workers that treatment with diethylstilboestrol alone will induce copious lactation in

virgin goats[1] and heifers[2] has recently been confirmed for the goat by Lewis and Turner.[3] Since the administration of a crude extract of ox anterior pituitary gland strikingly stimulates the milk production of the cow during the normal decline of lactation,[4] it was of importance to determine if the production of milk resulting from treatment with diethylstilboestrol could be further increased by injections of anterior pituitary extract.

Two nulliparous "scrub" goatlings, which had been dry for some months after having been brought into artificial lactation with diethylstilboestrol during the previous year, were subjected three times weekly to inunction of the udder with 1·0 gm. of 1 per cent. diethylstilboestrol ointment. In one case lactation quickly set in and the yield rose to a maximum of about 570 ml. daily, and then began to decline. It is of interest to note that this peak yield was approximately the same as in the previous artificially induced lactation. At this point, subcutaneous injection on alternate days of 5 ml. of an alkaline extract of ox anterior lobe (10 ml. = 2·5 gm. fresh tissue) was begun and the inunctions continued. The milk yield rapidly rose to about 870 ml./day and thereafter declined somewhat despite continuation of the treatment with both oestrogen and pituitary extract. Pituitary treatment therefore increased the peak yield induced by diethylstilboestrol alone by some 40 per cent.

The other goat, rather surprisingly in view of the fact that similar treatment had induced substantial lactation in the previous year, secreted no more than 20 ml. daily of milk during the period of inunction alone, even when the dose of diethylstilboestrol was doubled for a time, but addition of anterior pituitary treatment immediately evoked copious milk secretion, the daily yield rapidly rising to nearly 1,700 ml. This amount is comparable with the peak yield expected in a normal lactation period from such an ill-bred animal, and is about 20 per cent. above that attained on the previous occasion with diethylstilboestrol alone. Chemical analyses (fat, non-fatty solids, nitrogen partition, lactose) showed that the milk secreted by both goats was normal.



MILK YIELDS OF VIRGIN GOATS TREATED WITH DIETHYLSTILBOESTROL AND ANTERIOR PITUITARY EXTRACT. MILK YIELDS ARE EXPRESSED IN TERMS OF THE AVERAGE DAILY YIELD FOR EACH WEEK.

Diethylstilboestrol. x——x. Inunction of udder with 1 gm. of a 1 per cent. ointment effected three times weekly for 18 weeks. ..... Inunction of udder with 1 gm. of a 1 per cent. ointment effected three times weekly for 6 weeks, then with 2 gm. of 1 per cent. ointment for 4 weeks. Over the remainder of the experiment the original dose was used. *Pituitary extract.* 5 ml. (equiv. to 1·25 gm. of fresh ox anterior lobe) given on alternate days from the twelfth week of the experiments onwards.

These experiments, which are being continued, indicate that, in the goat, combined treatment with diethylstilboestrol and anterior pituitary extract can produce a much more intense lactation than with the former alone. It seems likely that under suitable conditions the artificial lactation so evoked may rival that normally following parturition, which is not surprising in view of the fact that its genesis presumably simulates the mechanism whereby normal lactation is induced.

This work has been aided by a grant from the Agricultural Research Council.

(1) Folley, S. J., Scott Watson, H. M., and Bottomley, A. C. (*Proc. Physiol. Soc.* March 9th, 1940.) *J. Physiol.* (1940.) 98. 15P.; *J. Dairy Res.* 12 (in the press).
(2) Folley, S. J., Scott Watson, H. M., and Bottomley, A. C. (*Proc. Physiol. Soc.* March 26th, 1941.) *J. Physiol.* 100 (in the press).
(3) Lewis, A. A., and Turner, C. W. Proc. 33rd Ann. Meeting of Amer. Soc. Animal Production. Nov. 29th-Dec. 1st, 1940. p. 63.
(4) Folley, S. J., and Young, F. G. *J. Endocrinol.* (1940.) 2. 226.

"VICTORY CHURN CONTEST"

The Minister for Agriculture, Mr. R. S. Hudson, has launched a national milk production competition—"The Victory Churn Contest"—the object of which is to stimulate maximum production in every county and on every dairy farm: every county in England and Wales has already been set a milk production target representing a 5 per cent. increase on last year, but that is a minimum.

The Royal Agricultural Society of England have agreed to present a challenge trophy to be awarded annually to the county achieving the most meritorious increase in milk output, starting with the year ending March 31st, 1943. An anonymous donor has presented six silver challenge churns—to be called "National Victory Churns"—for award annually to the leading counties in the six areas into which the country has been divided for the purposes of the contest. Six Regional Milk Leagues have been formed—Northern, Midland, Eastern, Western and Southern Leagues for England, and a Welsh League embracing all the Welsh counties.

League tables will be published from time to time showing the "points" gained by the counties and their position for June, September, December (1942), and March, 1943. The "points" will be calculated by the Milk Marketing Board after comparing the milk sales for the month concerned with those for the corresponding month of 1941.

Mr. Hudson has told every dairy farmer that his milk production this year may mean life or death to the nation, and that every gallon will count—specially next winter. Extra weight will, therefore, be given to winter milk production in assessing the "points."

In addition to the award of county trophies, outstanding achievement by the individual farmer and his herdsman or herdswoman will be recognised by the award of a "gold" or "silver" certificate to the farm. The "gold" certificate will go to the farm marketing 20 per cent. or more milk than in the previous year, while the farm showing an increase of not less than 10 per cent. will merit a "silver" certificate. Farmers who qualify for one or other of these awards must submit claims, supported by figures that will be checked by reference to the records of the Milk Marketing Board.

The official announcement concludes: "A spirit of determination has been aroused by the milk targets given to County Committees earlier in the year, and it is hoped that the contest now announced will stimulate such healthy and vigorous competition between counties and individual farms that redoubled efforts will in many cases result in increased output far in excess of the targets already set. Self-sufficiency in home-grown feeding-stuffs, improvements in feeding technique, earlier calving, rearing calves on less milk and healthier herds due to the veterinary control scheme can all contribute their quota to greater output."

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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THE SURVEY SCHEME

Sir,—As a practitioner occupied prior to the war mainly in treating small animals, but also doing a certain amount of farm work, I have naturally taken an interest in the various reports issued by the Survey Committee, the reports of meetings and the correspondence published in the *Record*. The recurring request of owners for assistance in dealing with barren cows led me to think that time devoted to acquiring more practical experience of up-to-date methods would be well spent. I accordingly communicated with a member of the Survey Committee, who desires to remain anonymous, who readily agreed to allow me to see practice with him, and the 18 days I spent with him will long be remembered as a most enjoyable, interesting and instructive period and I cannot express too highly my appreciation of his kindness and tolerance.

I saw the various recommendations contained in the Survey Committee's Scheme carried out daily. I saw sulphanilamide used alone and in some cases in conjunction with acriflavine injection into the udder on a number of acute cases of mastitis and bring about a return to marketable milk within two to four days in a most spectacular manner. I did not see any cases which failed to respond to treatment. I also saw cases of staphylococcic mastitis treated with staphylococcic toxoid with recovery in about ten days. Treatment was initiated early in all the cases I observed.

The owners appeared to have been well schooled and thoroughly to appreciate the importance of early treatment.

I visited farms on which contagious abortion had previously been rampant, but where the disease had been brought under control by vaccine therapy, which up to now has been employed for about two years. The owner of a flying herd of 240 cows informed me that previous to vaccination he had been almost put out of business by abortion and that since the beginning of this year he had had only one calf slipped. Many other owners and stockmen, among whose animals vaccination had been used for a sufficient period to prove its efficacy, spoke well of its application. I heard none decry its use.

I was present at the initial and subsequent visits paid to a farm on which the agglutination test showed 29 reactors out of 52 cows, three having aborted within the previous ten days, and also ten cows which it had been impossible to get into calf over a prolonged period. I witnessed the application of treatment and a scheme of control mapped out with the owner. I saw another byre only just over half full of milking cows in consequence of abortion and sterility and the failure to apply control measures early.

I fully appreciated the confidence clients of long standing had in their veterinary adviser, not only in veterinary matters, but also on questions of policy, feeding, cropping and general management. The willing co-operation of the owners and attendants was most remarkable and to be envied.

During my all-too-short visit I saw more than enough to convince me that the recommendations of the Survey Committee are capable of practical application on the farm, and that they will give satisfactory results if applied efficiently and conscientiously and that the veterinary profession can contribute materially to the production of more food and to the wealth of the farming community. It seems to me to be such a pity that the scheme has been decried at this stage. Criticism of a constructive nature, especially by men of experience, would have been so valuable when the report was first published, whereas destructive criticism, particularly at this stage, can do so much harm.

Yours faithfully,

Wilmington, C. J. R. LAWRENCE.
Sussex.
June 16th, 1942.

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INFERTILITY IN GUERNSEY CATTLE

Sir,—I was very interested to read Mr. Smythe's article, for in these columns on May 25th, 1940, I mentioned that in the preceding three years by far the largest number of cases of infertility of the physiological type had been encountered in this breed of cattle. In no other breed do I encounter so many cases in the heifers, and a common experience is to find no lesions to account for them. In my opinion, based purely on personal experience, functional sterility is undoubtedly on the increase in this breed.

I very much question the statement that the percentage of infertility in bovines thirty years ago was negligible. Perhaps it would be more correct to state that although it existed, very little if any knowledge on how it should be corrected was prevalent. If an opinion is based on odd cases of infertility for which advice is sought, a totally erroneous impresaion will be gained on the incidence of the disease, but if, on the other hand, one actually works with these herds and as a result has the opportunity periodically to examine many of the animals for irregularities in their sexual life, the picture is a much more serious one.

A clearer conception of infertility would, I think, be gained if it was regarded more as a symptom than as an actual disease. In the light of modern knowledge it seems that not a little of the infertility of farm animals is preventable. Most intelligent breeders need only to be shown the trinity: "breeding, feeding and management" (and all that this implies and includes) in a new light to realise that the means of prevention lie largely in their own hands. It has been stated that curing a sterility case is like hauling a ship off a reef. Whether the vessel be simply delayed or whether it be extensively damaged below the water-line, the operation is mere salvage applied to a potential wreck. It is more profitable for the owner to avoid the reefs. For this reason the lightship which guides his fleet safely is more valuable that the wrecker's yard.

Mr. Smythe regards iodine irrigations as of doubtful value and thinks that the arms of the operator may occasionally provide the necessary stimulus without the use of medicaments. His line of thought in this direction is not original. According to history, analogous digital treatment cured the temporary infertility of Maria Theresa; and much more recently, Lothe in the *North American Veterinarian*, vol. 3, no. 9, p. 473, 1922, stated, when reporting on 500 sterile cows, that "of all cases treated, *regardless of the causes*, 64·8 per cent. conceived—not a bad showing for the success of the treatment."

Finally, there remains the eternal problem of clinical fallibility. To recognise incipient lesions is almost, if not always, impossible. Perhaps this explains why, in many apparently normal cases, the use of Nielsen's or some other technique is followed by satisfactory results. It should be remembered that not a few of these cases are normal and would conceive at the next period without treatment.

De Solleysel was prophetic when he wrote: "It becomes a man of probity to own his ignorance as well as to communicate his knowledge."

Yours faithfully,

"Rothiemurchus," J. F. D. TUTT.
St. Cross,
Winchester.
June 10th, 1942.

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THE COMPETENCE OF THE NEWLY-QUALIFIED

Sir,—This subject has brought forward a number of letters and notably from the younger members or students themselves. It is refreshing to note that there are among them those who appreciate their limitations in "animal-mindedness," and seek to overcome them. I would suggest that the essentials are to be born with an inherited interest in domestic animals, particularly the horse and dog, and then considerable contact with the various kinds from a very young age; to be set on equine backs as soon as, or before, your own legs can carry you; to keep such things as rabbits, pigeons, dogs and ferrets and use them; to keep a goat or two and put them into harness, and when a bit older to break colts and develop a love of horse-flesh; to get on a farm if you're not already there and work with cart-horses, when you will hardy avoid handling and milking the cows. These contacts will develop animal-mindedness. If one can handle horses and dogs in a natural manner one is hardly likely to be entirely at a loss in handling other farm stock, but in my experience the reverse is less likely to hold good. Some of this may be beyond the reach of many, but contact with and work and sport among and with them over a considerable period would appear the next best thing. A matter of months at a teaching institute is hardly calculated to take the place of growing up among them.

Yours faithfully,

Axminster, E. G. CONISBEE.
Devon.
June 14th, 1942.

[*Errata.*—In Mr. G. Mayall's letter on this subject, in our issue of June 13th (page 246, col. 2), *for* Tattenhall College *read* Tettenhall College, and *for* Telbar Hopkin *read* Tedbar Hopkin.—*Editor.*]

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A VETERINARIAN ON VENEZUELA

Sir,—Following the B.B.C. broadcast of the Welsh news on Wednesday evening, 10th instant, came a most interesting talk on "South America," and Venezuela in particular. This talk threw some inteeresting sidelights on a country little known to many British people. The broadcaster was Mr. Edward Morgan, F.R.C.V.S., D.V.H., who for so many years was the only British veterinary surgeon in Venezuela. It is to be hoped that Mr. Morgan will not rest content with an all-too-brief broadcast, but will put his pen to paper and let us have a volume of his experiences in that remarkable country. In spite of a long sojourn in a Spanish-speaking country, Mr. Morgan's command of the Welsh language was masterly, and doubtless the similarity between the two languages may have accounted for a complete lack of "acento."

Yours faithfully,

High Lodge, D. J. ANTHONY.
Iverley,
Stourbridge, Worcs.
June 11th, 1942.

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WAR PROPAGANDA

Sir,—May I suggest to members who, having read and inwardly digested their *Veterinary Records*, make a practice of handing the copies to the local salvage committee, that certain copies would be much better posted to the Air Ministry for dropping over Germany.

One can imagine in Hanover, which has a veterinary college but no dogs, the inhabitants' chagrin on learning that, in this third year of war, there is still obtainable in England "an antiseptic soap made specially for dogs" of "finest toilet quality base," *vide V.R.*, 6/6/42, page viii.

Yours, etc.,

Long Planting, N. F. POLLOCK.
West Runton,
Cromer.
June 14th, 1942.